

REMARKS

The application stands with claims 1-21 and 30, where claims 1, 10, 12, 15, 17 and 30 are independent. Applicants amended claim 2 for the reasons stated below.

As a preliminary matter, Applicants amended the specification at page 11 to correct an informality by changing the word "in" to "for". This change is inherent to the paragraph and its context, and is made for consistency to Figure 5. No new matter is added by this amendment.

Claims 1-7, 10-18, 20-21 and 30 stand rejected under 35 U.S.C. §102(b) as being anticipated by Schulze et al. (Near-equilibrium Growth of Micro-pipe-Free 6H-SiC Crystals by Near Physical Vapor Transport, Applied Physics Letters, Vol. 72, No. 13, pp. 1632-1634, March 30, 1998). In response, Applicants traverse because Schulze does not disclose or suggest all of the features recited in each of the independent claims. Specifically, claims 1, 10, 12, 15 and 30 each recite similar language that explains that the seed temperature and source temperature are kept constant throughout substantially the "entire growth period" of the single crystal. Claim 1 recites that the growth period begins when seed crystal and source material temperatures (T_{seed} and T_{source}) are reached. Claim 10 similarly states that the growth period is the period during which any transport of source material occurs. Claim 15 recites that the growth period states when pressure is first reduced to permit transport. Claim 30 recites that the pressure is changed without changing temperatures during the entire growth period.

The Examiner cannot ignore the word "entire". He must give each word in the claims its proper meaning to define the scope of the claim.

In contrast to the process of the present invention, the Schulze reference clearly discloses a change in temperature from step 2 to step 3. Thus, it is irrelevant that Schulze on page 1633, 2nd paragraph, discloses constant temperature in steps 3 and 4. The section of the article cited by the Examiner states "keeping the source temperature T_{source} at 2180°C during step 4...." This paragraph makes absolutely no mention of eliminating the change of temperature between steps 2 and 3 of the process disclosed in the Schulze reference.

Since Schulze discloses that during step 2, growth on the seed crystal is achieved (page 1633, col. 1, line 4), no question exists that step 2 in the process of Schulze is part of the growth period. Therefore, the change in temperature between step 2 and step 3 in the Schulze process clearly is a change of temperature during the growth period.

As disclosed by the present specification, changes of temperature during growth causes a change in poly-type structures (such as 3C or 6H). A semiconductor with multiple poly types causes variations or inconsistencies in crystal characteristics and quality (Application pages 4-5).

Similarly, while claim 17 does not directly state that temperature is not changed during the entire growth period, claim 17 recites that the growth process starts and stops at the same temperature. Thus, claim 17 establishes, within a preheating step, a source material temperature (a)(ii) and a seed crystal temperature (a)(iii), and then in a cooling step, the temperature is decreased from these "said" source and seed crystal temperatures. Schulze does not disclose or suggest a growth period with the same starting and stopping temperatures. For each of these reasons mentioned above, Applicants submit that the §102(b) rejection of claims 1, 10, 12, 15, 17 and 30 based on Schulze has been overcome. Thus, Applicants respectfully request that the

§102(b) rejection of these independent claims and their depending claims 2-7, 11, 13-14, 16, and 18-21 also be withdrawn.

Claims 8-9 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Schulze et al. in view of Barrett, U.S. Patent No. 5,746,827. In response, each of these claims depends from one of the independent claims mentioned above. Therefore, claims 8-9 and 19 include all of the features of the independent claims plus additional features. For this reason, Applicants submit that the §103 rejection is overcome for the same reasons that the §102(b) has been overcome as discussed above. Therefore, Applicants respectfully request that the §103 rejection of claims 8-9 and 19 be withdrawn.

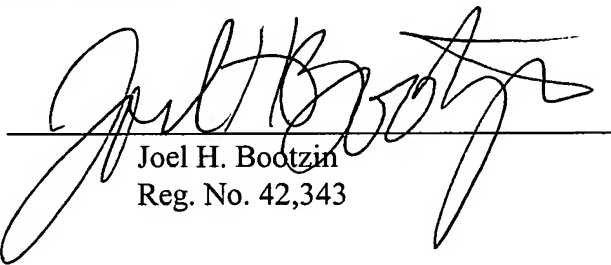
Claim 2 stands objected to due to the mention of P_0 , which should be P_1 . In response, although Applicants don't entirely agree with the Examiner, Applicants amended claim 2 as recited above to remove any confusion. Thus, Applicants respectfully request that the objection be removed.

For all of the reasons mentioned above, Applicants respectfully request reconsideration and allowance of all pending claims. The Examiner is invited to contact the undersigned attorney to expedite prosecution.

By a separate paper, Applicants submit herewith the fee for a one-month extension of time to respond to the instant Office Action. The Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 18-2284 of Piper Rudnick LLP, duplicate copy attached.

Respectfully submitted,

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January 9, 2004